

lignin and a dissolved sugar fraction; wherein the amount of metal oxide is twice to 4:1 the weight ratio of said phenol compounds obtained from lignin;

(d) removing the adsorption complex; and

(e) converting the dissolved sugar fraction into a fuel or chemical using a microorganism selected from the group consisting of *r. Zymomonas mobilis*, *Saccharomyces cerevisiae* D₅A, or *Lactobacillus rhamnosus*.

Claim 2 (Canceled)

Claim 3 (Canceled)

Claim 4 (Canceled)

Claim 5 (Previously Amended) The process of claim 1 further comprising, after adjusting pH, heating the biomass hydrolyzate to a temperature in the range of 80⁰C to 100⁰C.

Claim 6 (Canceled)

Claim 7 (Previously Amended) The process of claim 3 wherein the metal oxide is titanium dioxide, and said titanium dioxide is twice said phenol compounds of the biomass hydrolyzate.

Claim 8 (Currently Amended) ~~The process of claim 3 wherein said biomass hydrolyzate is a softwood and metal oxide concentration is four times by weight the phenols compounds content of said biomass hydrolyzate~~ The process of claim 3 wherein said biomass hydrolysate is a softwood.

Claim 9 (Currently Amended) The process of claim 1 wherein the dissolved sugar fraction includes less than one mg/mL of ~~lignin-derived~~ phenol compounds obtained from lignin.

Claim 10 (Previously Amended) A fermentable medium comprising an undiluted sugar fraction of claim 1.